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ABSTRACTS OF RESEARCH STUDIES IN AGRICULTURAL EDUCATION COMPLETED IN 1963-64 IN THE NORTH ATLANTIC REGION.

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THIRTY-TWO DOCTORAL DISSERTATIONS, STAFF STUDIES, AND MASTERS' THESES IN AGRICULTURAL EDUCATION ARE REPORTED IN THE FOLLOWING AREAS -- AGRICULTURAL PRODUCTION, EDUCATIONAL NEEDS, EMPLOYMENT OPPORTUNITIES, FARMERS, INTERNATIONAL EDUCATION, PROGRAM EVALUATION, PUBLIC OPINION, STUDENTS, SUPERVISION, TEACHER EDUCATION, TEACHING METHODS, TECHNICAL INSTITUTES, VOCATIONAL AGRICULTURE CURRICULUM, VOCATIONAL AGRICULTURE TEACHERS, AND YOUNG FARMER EDUCATION. THE PURPOSE, METHOD, AND FINDINGS OF EACH STUDY ARE SUMMARIZED. THE STUDIES ARE ARRANGED ALPHABETICALLY BY AUTHOR. (JM)

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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ALLGOOD, EARL V. Prediction of Academic Success of Freshman Students in Three Divisions at Virginia State College. Thesis, D.Ed., 1964, The Pennsylvania State University. 104 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To determine relationships between five pre-admission variables and first semester averages of freshman students at Virginia State College in order to establish a selective admission policy and to use the pre-admission variables and four placement tests to develop regression equations and probability tables for the counseling of students.

Method. -- Data for all freshman students in the three academic divisions of the College for the 1960-61, 1961-62, and 1962-63 years were used. The pre-admission variables were high school rank, sex, percent of high school class going to college, SCAT verbal scores and SCAT quantitative score for eleventh grade students. The post-admission variables were two standardized verbal tests and two mathematics tests. Multiple regression equations were developed.

Findings. -- The findings indicated that predictions from the data of the three academic divisions (Land-Grant, Liberal Arts, and Teachers) combined were as accurate as differential predictions by separate divisions. For selective admission of first semester students, high school rank (X_1), School and College Ability Test for Eleventh Grade Students, verbal score (X_4), and School and College Ability Test for Eleventh Grade Students, quantitative score (X_5) were the best variables. The three measures accounted for 38.9 percent of the variability in first semester grade point averages. The regression equation based upon the 1962-63 data for students in the combined divisions was:

$$Y = .196X_1 + .021X_4 + .035X_5 - .519$$

In the formulation of regression equations to be used in construction of probability tables for the counseling of freshman students, the findings indicated that high school rank (X_1), SCAT, verbal score (X_4), SCAT, quantitative score (X_5), and Cooperative English Test, Mechanics of Expression score (X_6) were the best variables. The four measures accounted for 40.1 percent of the variability in first semester grade point averages. The regression equation based upon the 1962-63 data for students in the combined divisions was:

$$Y = .171X_1 + .014X_4 + .033X_5 + .004X_6 - .650$$

The use of tables of probability of academic success prepared from regression equations developed from data on pre-admission variables for a recent previous freshman class can enhance the objectivity of a selective admission program at Virginia State College. The counseling of new students can be aided by predictions of academic success based on a combination of the significant pre-admission and placement measures.

ANTHONY, FRANK. A Comparison of Methods of Teaching Firearm and Hunting Safety in Selected Pennsylvania Schools. Staff Study, 1964, Bulletin 711, The Pennsylvania State University. 20 p. College of Agriculture, Agricultural Experiment Station, University Park.

Purpose. -- (1) To identify instructional problem areas for beginning hunters (ages 12-16) which involve firearm education and safe hunting practices, (2) to develop teaching aids in firearm and hunting safety education to be used in instruction in elementary and secondary schools, and (3) to compare the effectiveness of various methods of presentation in teaching hunting safety.

Method. -- A teaching experiment was conducted with 2,912 students in the 7th and 8th grades in 13 Pennsylvania schools. Different methods of presenting firearm and hunting safety information were randomly assigned to schools for each method. A criterion test of 50 items entitled "An Attitude Inventory for Beginning Hunters" was constructed from the "Ten Commandments of Shooting Safety." The students were given the attitude inventory before and after being taught by an assigned method. Four basic methods of instruction were:

Method 1. Photographic slide presentation with a script read by a teacher and a lecture-demonstration by a game protector.
Method 2. Lecture-demonstration by a game protector.
Method 3. Lecture by a teacher using a prepared text.
Method 4. Photographic slide presentation with a script read by a teacher.

Findings. -- All four methods of instruction, each used in two schools, were effective in changing the attitudes of beginning hunters when all students were considered. Methods 1, 3, and 4 were superior to Method 2. Girls had lower pretest scores, but their final scores were as high as those of the boys. Similarly, the scores of 7th grade students were lower initially and after instruction were not different from 8th grade students.

A variation in dress of the game protector was used with Method 2 in a supplementary experiment in two schools. Game protectors in civilian dress were more effective in changing attitudes than the same persons in official uniform. It was found by use of Method 4 in three additional schools that local classroom teachers can be used effectively in teaching firearm and hunting safety.

ANTHONY, FRANK, BRISTOL, B. K., and KIMMEL, O. A. The On-Farm Service Center in Mechanized Farming. Staff Study, 1964, The Pennsylvania State University. 38 p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose. -- To determine basic information for the development of models for on-farm service centers, power and small tools, and machinery storage sheds necessary to operate and maintain farm machinery and other equipment on a modern mechanized dairy farm.

Method. -- Thirty-four small, medium, and large dairy farms in western Pennsylvania were surveyed and compared with models constructed for each size farm.

Findings. -- Only seven of the thirty-four farms had on-farm service centers. The rest reported substitute facilities which were rated very low by their owners on such factors as space, location, light, heat, and ventilation requirements.

The medium size farms (20-39 cows) with service centers averaged 82 percent of the floor area specified in the model while the large farms (40 cows and over) had 45 percent of the area specified for an on-farm service center. For farmers to store all of their farm machines under roof, storage sheds 32' x 64' are recommended for small farms, 32' x 88' for medium farms, and 32' x 100' for large farms.

According to the suggested models for service centers, tools, and storage sheds on the three sizes of farms, the farmers have not as yet improved their buildings and related facilities in order to conduct an adequate preventive maintenance program. The low ratings given their present layout and facilities by the farmers adds further justification for the models recommended in this study. There are definite differences in needs on the small, medium and large dairy farms. Specific items and sizes are listed in the report.

BACH, LESTER F. A Suggested List of Tools and Equipment for Teaching Agricultural Mechanics in Vocational Agriculture. Essay, M.Ed., 1964, Cornell University. 62 p. Library, Cornell University, Ithaca.

Purpose. -- To determine the tools and equipment considered to be essential in teaching the "Suggested Course of Study for Agricultural Mechanics in Vocational Agriculture," to determine to what extent these tools and equipment were available in agriculture departments, and to prepare a list of essential tools and equipment to serve as a guide for teachers, administrators, and boards of education in selecting tools and equipment when implementing the Suggested Course of Study for Agricultural Mechanics or when setting-up a new agricultural department.

Method. -- A review of agricultural mechanics textbooks, bulletins, and other existing lists of tools, as well as current periodicals, was made in order to gain insight and provide background for the study. Fifty teachers were selected, based on their advanced work in farm shop. A questionnaire was sent to them, with forty-three of them responding, to aid in preparing a useful list of tools using the experience and ability of these teachers. The questionnaire was organized to include all the tools and equipment that would be needed to teach the units in the Suggested Course of Study for Agricultural Mechanics. Where overlapping of tools and equipment occurred in the areas of subject matter, these areas were combined.

Findings. -- The findings indicated a need for a concise list of tools and equipment to help improve the instruction in agricultural mechanics. It was further found that most teachers were using the Suggested Course of Study for Agricultural Mechanics or one patterned closely after it.

The list of essential tools and equipment suggested by this study pointed out the need for suitable facilities to provide instruction with these tools and equipment. Needed facilities included (1) sufficient work area for large and practical projects and (2) 240 volt electrical service. In addition, the shop should have a section with a well drained concrete floor, sufficient storage area for units being worked on and adequate tool and equipment storage.

BURTON, ROGER STANLEY. Employment Opportunities with Twenty-seven Agricultural Machinery and Major Farm Equipment Concerns in Delaware County, New York. Essay, M.Ed., 1964, Cornell University. 53 p. Library, Cornell University, Ithaca.

Purpose. -- (1) To locate the companies and the job opportunities available, (2) to determine the level of competency needed by the employee to fill these jobs, (3) to obtain some expressed needs from employers of their own or employee's shortages in education or training, (4) to secure a brief history of the background or training of several of those now in these jobs, (5) to find patterns of entry into these jobs, (6) to find patterns regarding advancement of employees on the jobs, (7) to find some employee expressions about employee training needs including scope of training necessary for entry and advancement, (8) to determine employer attitude regarding future role of vocational agriculture in preparing for their employee needs, (9) to determine employer's expressions about present educational training for employees they are hiring, (10) to find employer's expressions about our present educational system and how well its graduates adapt to jobs, (11) to determine present employment problems that have implications for future vocational agricultural or vocational training programs, (12) to determine some projections for boys getting training - with or without high school training, and (13) to gather information which would have implications regarding teaching methods.

Method. -- All agricultural machinery and major equipment dealers in Delaware County were enumerated. Dealerships considered to be in the "fringe area" were added because they serviced farms in the county or hired employees from the county. Dealers were contacted during the summer of 1963 and throughout the 1963-64 school year. A two-page questionnaire was used to gather information for the study. Each of the 27 dealers was personally interviewed by the researcher.

Findings. -- Each business averaged about seven employees. Most employees were classified as skilled or technical people. Sales and services were considered to be the major functions of each business.

Over 83 percent of the dollar volume of each dealership was agricultural in nature. Ninety-two percent of the employers indicated that 85 percent of their full-time employees and 73 percent of their part-time employees should have some agricultural competencies.

Remarks made by persons interviewed are summarized as follows: (1) Most employees needed a general background in or a knowledge of agriculture, (2) there is a need for training in salesmanship of agricultural equipment, (3) there is a need for more technical training in agricultural mechanics, (4) mechanical aptitude, sincerity, trustworthiness, work experience, and ability to talk the farmer's language were rated by dealers as the most desirable employee qualities, (5) there is a real need for more salesmen and mechanics, (6) automobile salesmen did poorly in most cases when hired by machinery dealers to sell farm equipment, (7) teachers should teach more maintenance and repair skills, (8) vocational agriculture was not given the same status as "academic" courses in the dealer's community, (9) state and national regulations, and other drawbacks, often were barriers to employers who would have offered work experience to students.

CRONIN, FLOYD KEITH. Subject Matter Necessary in a Course of Instruction in the Opinion of Parents of Vocational Agriculture Students of Green Bank High School. Problem, M.S., 1964, West Virginia University, 80 p. Department of Agricultural Education, West Virginia University, Morgantown.

Purpose. -- To obtain the opinion of the parents of vocational agriculture students as to what should be taught in vocational agriculture classes in the two main areas of agricultural science and agricultural mechanics.

Method. -- Questionnaires were used to obtain information pertinent to the study. The questionnaires were distributed to members of the young farmer class, to the parents of the fifty-one students then enrolled in vocational agriculture and distributed to sixty-six boys in grades six through nine in schools that served as feeder schools for Green Bank High School.

Findings. -- The parents indicated that jobs or units in livestock areas concerning sheep, beef cattle and poultry were important. In the crop area, potatoes, corn and alfalfa rated highest. Other jobs listed in the agricultural science program were: soil testing and fertilizing, conservation, land judging, sprays and insecticides, farm planning, Future Farmers of America and record keeping. In the agricultural mechanics program, jobs on selecting, using and maintaining shop machinery, engines, trucks, tractors, and shop tools and equipment were checked as important. Jobs on welding, soldering, concrete work, water supplies and sanitation along with areas of electricity and soil and water management were also checked as important.

Parents were asked to indicate jobs which they thought were unnecessary in the study of agriculture. Every job concerning horses was indicated thus. The job of repairing and preserving leather, which is equestrian related, was the only job in the agricultural mechanics program listed as necessary.

In a listing of jobs which the parents thought should be taught elsewhere, it was found that the following were listed most frequently: income tax, budgeting, insurance, family food production, farm laws, and legal arrangements, farm credit, housing and home management, and parliamentary procedure.

DEMICK, DONALD G. Improving the Agricultural Engineering Technology Curriculum at the Agricultural and Technical Institute, Cobleskill, New York. Essay, M.Ed., 1964, Cornell University. 84 p. Library, Cornell University, Ithaca.

Purpose. -- (1) To compare the curriculum in agricultural engineering at Cobleskill with that of the other agricultural and technical institutes in New York State, (2) to discover the placement of students who majored in Agricultural Engineering Technology, (3) to discover employee competencies believed to be important by prospective employers, and (4) to make recommendations for strengthening the Agricultural Engineering Technology curriculum at Cobleskill.

Method. -- Courses in the Agricultural Engineering Technology curriculum at Cobleskill were compared with the courses in the same or related technology curricula in other agricultural and technical institutes. Catalog descriptions of courses were used and all credit hours adjusted to a semester basis.

Placement records of Agricultural Engineering Technology majors for the years between 1959 and 1963, taken at the time of graduation, were compiled. A panel of consultants was used to help develop a questionnaire to survey the members of the New York Farm Equipment Dealer's Association and personnel from all companies who maintained branch houses in New York State. The questionnaire was designed to determine the knowledge and abilities needed in the farm and power equipment field, at both the company and dealer level. Replies were received from 100 companies and dealers.

Findings. -- The curricula at Alfred, Cobleskill and Morrisville had the same general make-up and credit hours. The curriculum at Canton was general agriculture, at Delhi, an engineering-level program, and at Farmingdale, mechanical power technology. Other colleges did not have curricula in Agricultural Engineering Technology.

Placement records indicated that 75.5 percent of the trainees obtained employment in the field of training including the fields of service, parts, sales, materials handling, light industrial equipment, and farming.

From the 105 items in ten categories of knowledge and abilities needed, it was determined that the training of service and parts personnel tended to follow each other closely. The training for salesmen and owners or managers followed the same pattern. There were some differences in training emphasis at the company and dealer levels.

A farm background was not considered necessary for success in the field but was considered desirable. Less emphasis was placed on this characteristic at the company level.

Minimum educational level, from the company viewpoint, was two years of college or above. Less importance was placed on this factor in the dealerships.

The curriculum at Cobleskill might be improved by: (1) strengthening in mathematics, (2) expanding the curriculum to include courses in light industrial equipment, refrigeration, metallurgy, and lawn and garden equipment, and (3) revising the course content and expanding the curriculum to include two specialization options - (a) service and parts, and (b) sales and management.

DITTENHAFER, CLARENCE A., JR. Programed Instruction Compared with the Standard Method of Preparing an Agricultural Correspondence Course. Thesis, M.Ed., 1964, The Pennsylvania State University. 65 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To compare a programed correspondence course with a standard type correspondence course in terms of knowledge of home greenhouse management after completion of the course by high school students and by adult garden club members. Time used and student attitudes were additional considerations.

Method. -- Sixty-eight students in vocational agriculture in four high schools and twenty members of three adult garden clubs in York County, Pennsylvania, took a correspondence course of The Pennsylvania State University titled "The Home Greenhouse." In both groups a random half of the persons completed the course in a linear programed form and the other half took the standard lesson type course. Each student took a fifty-item multiple choice examination at the end of the course. Analysis of variance tests and correlation procedures were used in the analysis of the data.

Findings. -- There was no significant difference in the average final test scores for the high school students or the adult garden club members who took the course in the programed or standard form. The garden club members made significantly higher scores than the high school boys on both forms of the course.

For the programed form, the adults scored an average of 80.0 percent correct answers; the high school students averaged 67.5 percent. On the standard form of the course the garden club members averaged 75.6 and the high school students 70.0 per cent.

There was no correlation between hours used in studying the course and test score for the garden club members. The high school students, however, who used more time made higher scores on both forms of the course. The correlation coefficients were 0.65 and 0.62, significant at the .01 level. The adults averaged 8.44 hours of study. The high school students were finished in 3.46 hours, probably a total that for many boys kept their scores lower than they might have earned.

Eighty percent of the garden club members expressed a desire to take more correspondence courses. Thirty-one percent of the high school students would plan to enroll for another course.

HANER, RICHARD LELAND. Determining the Need and Designing a Young Farmer Program for the Truxton Central School District. Essay, M.Ed., 1964, Cornell University. 74 p. Library, Cornell University, Ithaca.

Purpose. -- (1) To determine if there were sufficient out-of-school young farmers in the Truxton Central School District to justify a young farmer program, (2) to determine the social opportunities, interests and needs of these young farmers, (3) to determine the educational needs and interests of these young farmers, and (4) to develop a young farmer program for the school year 1964-65.

Method. -- Criteria were developed for defining the term "young farmer." The various sources available in the community were used for securing the names and addresses of all qualified full-time or part-time young farmers. The school district map was used in locating the young farmers geographically. The interview method was used in surveying the young farmers.

Findings. -- The study indicated that a young farmer program should be established since there were 35 qualified persons of whom 75 percent expressed interest in attending classes. Since 80 percent were married, it was concluded that wives should be included in the program when topics of interest were scheduled and when social activities were planned.

Dairying proved to be the major type of farming for the area. Herds averaged 51 Holstein cows and 21 heifers. Other findings from the survey indicated that milk records were kept by 45 percent of the young farmers while only 22 percent used them for culling herds. Soil maps were available on 65 percent of their farms, yet only 15 percent used them. Low production accounted for 51 percent of the cows culled. Accurate farm records were kept by only 40 percent of those surveyed. Half of the young farmers raised insufficient feed for their stock on the home farm. The young farmers planned to increase their herd size, livestock production and crop production within the next five years.

Seventy-five percent of the young farmers were high school graduates. Eighty-eight percent had taken some vocational agriculture.

HANNEMANN, JAMES W. The Effectiveness of Teaching Parliamentary Procedure Through the Use of Programed Instruction. Thesis, M.S., 1964, Cornell University. 115 p. Library, Cornell University, Ithaca.

Purpose. -- The purpose of this study was to test the following hypotheses: (1) programed instruction is an effective method for teaching parliamentary procedure to vocational agriculture students and (2) there is a positive relationship between the time required by the students to complete the parliamentary procedure program and their score on the criterion examination.

Method. ---A programed booklet titled Fundamentals of Parliamentary Procedure was written. A criterion examination based on the subject matter content of the booklet was constructed. The reliability of the criterion examination was determined by administering the examination to ninety-five Agriculture Three and Four students representing twelve schools in the state of South Dakota. A reliability coefficient of .96 was obtained when the findings were subjected to the Kuder-Richardson Formula Number Twenty based on an item analysis.

A random sample post-test-only-control group design was used to determine the effectiveness of the programed instruction booklet. The experimental group that used the programed booklet consisted of two hundred students representing thirteen schools in South Dakota. The control group consisted of 183 students representing twelve schools in the same state.

Findings. -- The mean post-test score of students in the experimental group was 59.6 and the mean post-test score of those in the control group was 46.6. A comparison of post-test scores in the experimental and control groups using a t-test of significance, revealed a t-value of 7.67 which was significant at the one percent level. On this basis, it was concluded that programed instruction was an effective method of teaching parliamentary procedure.

A correlation of 0.37 was obtained when the scores of the experimental group and the time required to complete the booklet were subjected to the product-moment correlation formula. The r-value was subjected to a t-test of significance and a t-value of 5.66 was obtained which was significant at the one percent level.

HASH, JOHN ALEX. An Acceptable Teaching Load in Vocational Agriculture as Viewed by School Administrators and Agricultural Educators. Thesis, M.S., 1964, Cornell University. 173 p. Library, Cornell University, Ithaca.

Purpose. -- (1) To determine what constitutes an acceptable teaching load for a teacher of vocational agriculture in southwest Virginia as viewed by division superintendents, school principals, supervisors and teacher trainers in agricultural education, and experienced teachers of agriculture, and (2) to compare the present teaching load with what each of these five groups thought it should be.

Method. -- A mailed questionnaire was used to obtain the data. The sample consisted of 18 division superintendents, 48 school principals, 9 state supervisors, 8 teacher trainers, and 58 experienced teachers of agriculture. Responses from each group were 94.4, 97.9, 100, 100, and 87.9 percent, respectively. The response of all five groups combined, 132 respondents, was 93.6 percent.

Five null hypotheses relating to in-school enrollment, young farmers enrollment, adult farmer enrollment, agricultural employees off-the-farm enrollment, and hours worked per week were tested by one-way analysis of variance with rejection at the 5 percent level of probability. When a significant F-value was obtained by analysis of variance, differences among the means of the five groups were tested by Duncan's new multiple range test as extended by Kramer for unequal "n's." The comparison of present teaching load with the perceptions of the respondent groups employed Dunnett's multiple comparison procedure for comparing several treatments with a control. Generalizations were made to a somewhat hypothetical population in the bordering mountainous counties of Kentucky, North Carolina, and Tennessee which resembled the sample closely in all respects considered relevant by the investigator.

Findings. -- Both division superintendents and school principals preferred a significantly higher enrollment of in-school students than teacher trainers and agricultural teachers. It was not possible to demonstrate a difference on this variable between the following groups: teacher trainers, agricultural teachers, and state supervisors; state supervisors and school principals; state supervisors, school principals, and division superintendents; and school principals and division superintendents. The four null hypotheses relating to young-farmer, adult farmer, and agricultural employees off-the-farm enrollments and hours worked per week could not be rejected.

There were no significant differences between the present teaching load as measured by in-school enrollment and what each group of division superintendents, school principals, state supervisors, and agricultural teachers thought it should be. Only the comparison between the means of the teacher-trainer group and the present in-school enrollment yielded a significant difference. Comparisons of the present hours worked per week and what the respondent groups considered correct yielded a significant difference at the 1 percent level of probability for all five comparisons.

The following conclusions were drawn regarding teaching load: (1) Thirty-five to 42 in-school students, 13 to 17 young farmers, and 14 to 22 adult farmers constitutes an acceptable teaching load, (2) high school students, young farmers, and adult farmers should receive approximately 70, 18, and 12 percent, respectively, of the vocational agriculture teacher's instructional time, (3) more research should be conducted before any valid conclusions regarding agricultural employees off-the-farm may be drawn, and (4) the teacher should perform all professional duties and responsibilities within a 46 hour week, which was 9 hours less than the present mean working hours reported.

KANTASEWI, NIPHON. Experiments in the Use of Programed Materials in Teaching an Introductory Course in the Biological Sciences at the College Level. Thesis, Ph.D., 1964, The Pennsylvania State University. 178 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To compare the effectiveness of three methods of teaching the subject matter of the middle third of an introductory course in microbiology. The methods were (1) conventional presentation of seven lectures by the course instructor, (2) use of a linear programed text during class time without and with class discussion and (3) use of the same programed material outside of class with the class time devoted to assigned problems constructed from the text or to discussion led by a graduate assistant.

Method. -- The 126 students enrolled for the course Bacteriology 6 in the Winter Term 1963 were assigned randomly to the first method and to the two variations of the second method. In the Spring Term 1963 there were 109 students assigned randomly to the first method and to the two variations of the third method. Students in all groups had access to the textbook and attended weekly laboratory sessions.

There were 807 frames in the linear programed text written from the instructor's lecture material, tape recorded in the prior Fall Term. The lectures were on antibiotics, microbiology of water, milk, soil and sewage, mycology and industrial microbiology of milk products and food spoilage.

The student grade in the examination on the first third of the course was used as an adjusting variable in covariance analysis of scores on the examination written by the course instructor for the material taught during the experiment.

Findings. -- The adjusted mean scores of the three groups in the Winter Term were 81.3, 79.2 and 81.5. The differences were not significant at the .05 level. Similarly, the adjusted mean scores of 60.4, 60.8 and 60.0 for the three groups in the Spring Term were not significantly different. The Spring Term instructor administered a more difficult examination but the results corroborated the Winter Term findings that the linear programed materials were as effective as the conventional line lectures.

Regression of the student scores on the experimental middle third of the course on their scores on the first examination was significant. Bartlett's test showed the variances of scores in the three groups in each term to be homogeneous.

Students who prior to the experiment expressed confidence in programed materials did not make higher scores. Classified by thirds on the first examination, the students in each treatment did not make significantly different scores. The programed materials were equally effective under each of the controls of the study.

KATZ, GIDEON. Determining the Vocational Needs in Agriculture of Beginning and Prospective Farmers in Newly Developed Areas in Israel. Thesis, Ph.D., 1964, Cornell University. 250 p. Library, Cornell University, Ithaca.

Purpose. -- (1) To identify principal farm jobs in the main production enterprises, (2) to determine the actual performer of these jobs on moshav farms, (3) to ascertain who in the future should perform these jobs (the ideal performer), (4) to classify the jobs in terms of their actual and ideal performer, and (5) to draw implications for curriculum development in rural education.

Method. -- Comprehensive lists of farm jobs were compiled and verified by agricultural experts for the following enterprises: industrial crops, truck crops, plantations, poultry, dairy and sheep production.

The lists were transformed into questionnaires and mailed to extension agents who checked the ideal performer of each farm job on the moshav farms in their respective area. The actual performer of the jobs was ascertained in interviews with beginning farmers and instructors.

Five categories of performers; namely, the farmer himself, the farmer with guidance, local (village) experts, outside specialists, and "not performed" (or "should not be performed"), were identified.

The mode for the actual and the ideal performer was computed for each farm job. Each farm job was assigned a "degree of specialization" in accordance with the mode for the ideal performer. The "urgency" of the job was defined in terms of the discrepancy between the actual and the ideal performers.

Findings. -- Principal farm jobs varied considerably from one area to another. Beginning farmers failed to carry out many of the jobs ascribed to them. Although these jobs were not identical in all three areas, it was found that farm jobs concerned with record keeping, disease control, maintenance of constructions and conveniences, and operation of farm machinery were often not performed.

As a rule, managerial decisions were not carried out by farmers themselves, but rather by farmers with guidance, or by specialists. Selection and purchase of supplies, grading and marketing, and operation of tractors and machinery were generally delegated to local experts. There existed a considerable gap between the actual and the ideal performer of numerous farm jobs.

The farm jobs in each enterprise were classified according to their assigned degree of specialization and urgency, and implications were made concerning the organization of courses of study for beginning and prospective farmers in newly developed areas.

KEBRET, MAKONNEN. The Contribution of Agricultural Education to the Rural Development of Ethiopia. Thesis, Ph.D., 1964, Cornell University. 215 p. Division of Agricultural Education, Cornell University, Ithaca.

Purpose. -- (1) To analyze the present situation in Ethiopia and review the development of agricultural education in the world to serve as background information for determining appropriate guidelines and objectives for agricultural education for Ethiopia, (2) to recommend guidelines and objectives for agricultural education based on the review of materials and suggestions from a jury of agricultural education experts, (3) to propose how agricultural education would contribute to the rural development of Ethiopia, and (4) to develop a theoretical framework for administration in agricultural education.

Method. -- The analysis of the present situation in Ethiopia and the review of literature in agricultural education was made through intensive library research. The formulated guidelines and objectives based on this review were submitted to a jury of experts for their criticism as a means of verification. After analyzing the criticisms of the jury, guidelines and objectives were developed to be used in guiding and implementing the agricultural education programs in Ethiopia. Some aspects of the role of agricultural education were critically analyzed, and proposals were made as to their contribution to the rural development of Ethiopia. Further, a theoretical framework of agricultural education was developed.

Findings. -- The technical backwardness in agriculture, the isolation of rural people from others in society, the rituals and the practices of religion in the use of certain plants and animals, and the development of status through ownership of livestock, the large number of commemorative and feast days, the land tenure system, and the existing beliefs, values and attitudes are some of the critical factors that are to be considered in the rural development of Ethiopia.

The recommended guidelines and objectives of agricultural education provide a basis in guiding and directing agricultural education programs for the rural development of Ethiopia. The majority of the jury of experts favored the introduction of agricultural education to orient and to educate the elementary and secondary school children, to train the young and adult farmers, and to educate prospective farmers and technical experts at the secondary and post secondary level. The experts unanimously agreed that the College of Agriculture should take the initiative to prepare the prospective teachers.

Among the urgent needs that face Ethiopia is the utilization of her human and natural resources concentrated in the rural area. It was proposed (1) that through a proper agricultural education program the rural society should be acquainted with possible alternatives to better their situation and (2) that the government should take the lead in initiating intensive rural development programs.

In the light of the availability of managerial and technical skills necessary for efficiency in administration, centralized administration for agricultural education was recommended.

KING, JOHN FREDERICK. The Development and Educational Applications of Input-Output Data for Use in Programming Pennsylvania Swine Production. Thesis, M.S., 1964, The Pennsylvania State University. 46 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To provide information for teachers, county agents and others to use in helping farmers to plan and to evaluate commercial swine production by (1) summarizing records on various size swine enterprises, (2) compiling input-output data applicable to budgeting swine enterprises in Pennsylvania, (3) developing swine budgets at different levels of operating efficiency and prices, and (4) evaluating the effect on net returns of various types of swine enterprises.

Method. -- Twenty-one Pennsylvania farmers engaged in commercial swine production mailed to the University each month in 1963 a report of physical production data relating to the swine enterprise. They used Part I of the Pennsylvania Farm Account Book to record receipts and expenses for the entire year and Part II for beginning and ending inventories and depreciation schedules.

The data analysis included a detailed summarization of the year's business by size and type of operation, a listing of factors associated with success and a presentation of efficiency data as input-output relationships.

Findings. -- The unit cost of pork production decreased as the size of enterprise increased from 5 sows farrowed twice per year to more than 80 sows. The decrease in unit cost was relatively constant up to 50 sows. The data beyond that size of enterprise were insufficient for prediction. Total net returns increase with size of business in situations of efficient production per sow.

Feed, the most important cost item, accounted for 78 percent of total cost of production. Cost of feed per hundred weight of pork is as important as the physical feed conversion rate. Capital investment averaged $277 per sow and $24 per hog in finishing operations.

One-fourth of the producer's lost money, one-half had net returns up to $3 per hundred weight of pork produced and one-fourth realized a net return of $3 or more.

Two sets of data are needed for partial budgeting: physical input-output relationships and cost-price data. Basic budgets were constructed for three situations, one in which the sale price was increased one dollar, a second in which feed conversion was lowered by ten pounds per hundred weight of pork and one in which the animals were fed to a finished weight twenty pounds higher. Each plan resulted in some increase in net income.

LASAP, SOTERO L., JR. Relationship of Selected Pre-college Experiences to Success in Teaching Vocational Agriculture. Thesis, M.S., 1964, University of Maryland. 95 p. Library, University of Maryland, College Park.

Purpose. -- To determine the relationship of success in teaching vocational agriculture to teachers' pre-college background in farming, supervised farming programs, Future Farmers of America and farm mechanics.

Method. -- Teachers' pre-college experiences were secured through a questionnaire mailed to a stratified random sampling of vocational agriculture teachers who graduated from college in the United States in 1959 and 1960 and who were teaching vocational agriculture in early 1964. Teaching success was determined by ratings of teachers' performance by their principals, obtained in a companion study. Of the sample of 173 teachers, 75 percent returned questionnaires. Correlation was used to describe relationships.

Findings. -- (1) There was no significant relationship between any of the selected variables constituting pre-college general farming background and success in teaching vocational agriculture, (2) of the pre-college experiences in supervised farming programs, only the teachers' self-rating of their experiences in selected farm jobs showed significant relationships with success in teaching vocational agriculture, (3) there was no significant relationship between pre-college Future Farmers of America experiences and success in teaching vocational agriculture, and (4) there was no significant relationship between index of teachers' self-ratings of experiences in selected farm mechanics jobs and success in teaching vocational agriculture.

LOVE, GENE M. and STEVENS, GLENN Z. Educational Effectiveness of Three Sequences of Scheduling Classes and of Three Patterns of Supervision and Instruction in an Inservice Education Course for Teachers. Staff Study, 1964, The Pennsylvania State University. 18 p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose. -- To compare the educational effectiveness of (1) three sequences of scheduling classes and (2) three patterns of supervision and instruction in inservice teacher education classes.

Method. -- Classes were scheduled as three-day Workshops, Weekly sessions and Monthly sessions. Each sequence of scheduling was employed according to the following three patterns of supervision and instruction: (1) Qualified Teacher, (2) Educational Specialist and (3) Technical Specialists. The order in which each of the three scheduling sequences was used with each of the three patterns of supervision and instruction was regulated by a modified Latin square design to control its effect on the two major treatment variables. Class instruction was limited to fifteen hours. The qualified teacher and educational specialist were given intensive training to prepare them to teach a unit on quality milk production. Four Technical Specialists, selected for their technical knowledge, were assigned to teach the six problem areas in the unit on quality milk production.

Teachers who studied quality milk production in the classes taught by the Qualified Teacher and the Educational Specialist were given a teacher's plan for the course and provided selected resource materials. Each Technical Specialist was allowed to select his own method of teaching the problem areas assigned to him. Educational effectiveness was measured in terms of knowledge learned on a 60-question multiple choice test. Data were analyzed by analysis of covariance. Covariates used were (1) pre-test scores and (2) attendance. Level for significance was set at .05.

Findings. -- The Workshop was found to be a significantly better method of scheduling classes than the Monthly sequence. No differences were observed between the Workshop and Weekly sequences. Both the Qualified Teacher and the Educational Specialist patterns of supervision and instruction were significantly superior choices.

The mean adjusted test scores (adjusted for attendance and pre-test score) for teachers in each treatment group were as follows: sequences of scheduling classes; Workshop - 49.8, Weekly - 48.1, Monthly - 47.6; patterns of supervision and instruction; Qualified Teacher - 50.4, Educational Specialist - 49.8, Technical Specialists - 45.3.

Three-day Workshops taught either by a Qualified Teacher or an Educational Specialist resulted in the greatest amount of subject matter learning by teachers enrolled. The traditional practice of using several Technical Specialists as instructors to teach off-campus inservice courses for teachers was not equally effective. The competence of faculty members used as technical specialists is not questioned. It is the administrative procedure of scheduling one or two class sessions to be taught by each instructor that resulted in lowered achievement.

MASON, PEARL EVERETT. Some Employment Opportunities for the Vocational Agriculture Trainees of Gilmore County. Problem, M.S., 1964, West Virginia University. 40 p. Department of Agricultural Education, West Virginia University, Morgantown.

Purpose. -- To find the number of jobs available in agriculture and related occupations for the vocational agriculture trained of Gilmer County, and to determine the level of employment and salary range of each of these jobs.

Method. -- Some information for this study was gleaned from the files of the following sources: (1) County files, (2) County Board of Education, (3) Soil Conservation Office, (4) Other USDA sources, (5) West Virginia University, (6) Glenville State College, (7) Files of the County Vo-Ag Departments, and (8) Principal's files.

A questionnaire was used to obtain a reasonable estimate of the number of farmers needed in Gilmer County each year to replace those retiring. Another questionnaire was used in securing the number of farm-related occupations in Gilmer County. Personnel in agricultural business were interviewed to determine their needs and how they obtained their workers.

Findings. -- Approximately eighty-one jobs are available in Gilmer County each year for agricultural graduates - high school and college. Eighteen vocational agriculture graduates with three or four years training are available from the county schools. The remainder of the opportunities are not being filled by other graduates; therefore, the information contained in the study points out the need for an expanded agricultural training program, particularly in the area of related agricultural occupations.

McCLAY, DAVID R. A Comparison of Programed and Lecture-Discussion Methods of Teaching Farm Credit to High School Youth and Adults. Staff Study, 1964, The Pennsylvania State University. 42 p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose. -- To determine the effectiveness of programed instruction compared with lecture-discussion as a method of teaching farm credit to three grade levels of vocational agriculture students in high schools.

Method. -- A resource booklet and teaching unit were developed for the students and teachers, respectively, involved in the lecture-discussion method of teaching. A programed booklet requiring overt responses was developed for the other group of students. The multivariate design involved 480 students in 20 schools in 1961-62 and 128 students in 8 schools in 1962-63, in Pennsylvania, Delaware, Maryland, Virginia, and West Virginia, where complete programs of vocational agriculture were offered. The major variables were teaching method, grade level, and answer sheet. Individual differences among students in 1961-62 were controlled by a standardized test on reading ability and by a pretest on knowledge of farm credit. The following year an involvement index was substituted for the test of reading ability.

Findings. -- The lecture-discussion method of teaching farm credit was found to be significantly better than programed instruction in the 1961-62 phase of the experiment. Some lecture-discussion students used twice as much time as did the programed instruction students. When the amount of time was controlled during the 1962-63 phase of the study, there was no significant difference between the mean scores for each method, although the higher scores for lecture-discussion continued.

Generally speaking, the higher the grade level and age of the students the greater were the pretest, test, and retest scores. The same relationship was evident in the reading comprehension scores and the involvement index scores. Students in each grade level increased their knowledge of farm credit from the pretest to the test. The differences due to grade level were significant in both years of the experiment. Use of the feed-back answer sheet resulted in higher retest scores, statistically significant in the first phase only.

In the second phase of the study in 1962-63 the teachers answered a questionnaire that asked for their opinions about programed instruction. They felt that it should be integrated with other methods of teaching, that while stimulating thinking it results in fewer questions being asked than in the lecture-discussion method, and that good students tend to derive more benefit from it than students of lesser ability.

McGUIRE, ROBERT MICHAEL. A Study to Determine How Vocational Agriculture Students of Cortland County, New York, Compare with National Norms on IQ and Reading Ability. Essay, M.Ed., 1963, Cornell University. 41 p. Library, Cornell University, Ithaca.

Purpose. -- To determine by means of IQ and reading ability tests, how the vocational agriculture students of Cortland County, New York, compare with the national norms for these two measures.

Method. -- The six schools in Cortland County, New York, which cooperated in the study, had an enrollment of 120 students in vocational agriculture. Total student enrollment grades for all schools were as follows: 47 ninth graders, 40 tenth graders, 18 eleventh graders, and 15 twelfth graders. Students were given the Cooperative English Test, CI: Reading Comprehension, and the California Test of Mental Maturity (1950 S Form). After selection of the test had been completed, arrangements were made with the vocational agriculture teachers and principals concerned to administer the test in each of the six schools. The test was selected to meet several criteria; namely, (1) administerable during a 40-minute class, (2) administerable by the author or the classroom teacher, (3) administerable to students in grades 9 through 12, (4) available at a reasonable cost, and (5) adaptable to machine scoring. Raw scores for the two tests were converted to scaled scores and percentiles, permitting comparisons with national norms. The Cooperative English Test was selected to show achievement in vocabulary, speed of comprehension, and level of comprehension. The California Test of Mental Maturity tested language IQ, non-language IQ, and total IQ.

Findings. -- Compared with the national norms, students of vocational agriculture in Cortland County, as a group, do not have the same reading ability as their peers of the same age and grade level. Their percentile rankings by year in school had the following means: 9th grade - 26th percentile, 10th grade - 27th percentile, 11th grade - 27th percentile, 12th grade - 28th percentile.

The findings did show that for intelligence quotient Cortland County vocational agriculture students equalled their peers of the same age and grade level. In some instances they rated slightly above the national norms, as shown by the following comparison of median scores for total IQ: Grade 9, Cortland - 101.5, National Norm - 101.5; Grade 10, Cortland - 103.0, National Norm - 103.0; Grade 11, Cortland - 111.0, National Norm - 104.0; Grade 12, Cortland - 105.0, National Norm - 105.0.

NEELY, RONALD RAY. A Study of the Production and Marketing of Christmas Trees in Pleasants County and Their Effect on Vocational Agriculture. Problem, M.S., 1964, West Virginia University. 59 p. Department of Agricultural Education, West Virginia University, Morgantown.

Purpose. -- To determine the potential of Christmas trees as an economical enterprise in Pleasants County, West Virginia, and evaluate the problems involved in producing and marketing trees and the effect vocational agriculture can have in influencing certain changes in practices concerning production and marketing.

Method. -- A survey form and letter of explanation were sent to forty selected growers. Of the forty growers sent forms, twenty-two answered. Three chose not to be considered.

People who are familiar with this particular situation were interviewed to gather opinions and observations along with philosophy.

Findings. -- Christmas trees are a wise choice for an enterprise in Pleasants County due to farming conditions, land conditions, topography, and the part-time farming situation.

There are many factors both physical and economic which hinder production and to a certain extent these relate to the amount of available knowledge and ingenuity of the individual.

A total program of vocational agriculture consisting of high school classes and young and adult farmer classes and groups may be used to bring about desirable changes to improve the production and marketing of Christmas trees.

OLCOTT, KENNETH WAYNE. Determining Electrical Training Needs for Men Who Install and Service Farm Materials Handling Equipment. Essay, M.Ed., 1964, Cornell University. 74 p. Library, Cornell University, Ithaca.

Purpose. -- (1) To determine jobs being done by men who install and service farm materials handling equipment, (2) to determine jobs for which equipment service men feel they would like to have additional training, (3) to determine new trends in using electricity for farm materials handling equipment, and (4) to provide a basis for revising the course content for the course in farm electricity at the Cobleskill Agriculture and Technical Institute.

Method. -- The names of 234 farm materials handling equipment service men were obtained from the farm service representatives of the electric power companies that serve New York State. Each equipment service man was mailed a questionnaire in which he was asked if he had performed each of 34 electrical jobs in his work in the previous three years and if he would like to receive additional training if he had the opportunity. The same list of jobs was sent to a selected panel of consultants who were asked to indicate if they felt each job was necessary, desirable, or not necessary in a training program for farm materials handling equipment service men. Each consultant selected had received training in farm electricity and was working in a professional capacity in the field.

Findings. -- Eighty-one equipment service men and five consultants returned the questionnaire. Two jobs were performed by 50 percent or more of the equipment service men and considered necessary by 50 percent or more of the panel of consultants. These jobs were to calculate voltage drop and observe its effect on the equipment being installed and to calculate the capacity of air handling equipment and determine where to install it.

Twenty-two jobs were performed by 50 percent or more of the equipment service men and considered necessary by 50 percent or more of the panel of consultants. Four jobs were performed by 50 percent of the equipment service men and were considered desirable by 50 percent of the panel of consultants. Six jobs were performed by less than 50 percent of the equipment service men and considered necessary by less than 50 percent of the consultants.

Three jobs were considered to be new trends because the proportion of consultants considering the jobs to be necessary was 25 or more percentage points higher than the percentage of equipment service men who were performing the job. These new trends were: (1) Determine the type and size of motor control devices, (2) calculate capacity of air handling equipment and determine where to install it, and (3) select and install overload protection devices for motors.

It was determined that farm materials handling equipment service men are not highly interested in inservice training programs since for only two jobs was additional training desired by 50 percent or more of the respondents.

Course content for the course in farm electricity at the Agriculture and Technical Institute at Cobleskill, New York, was determined as a result of this study and the course outline for this course was revised.

PEARCE, FRANK CHARLES. The Educational Needs of Beginning Farm Operators in Becoming Established in Farming in New York. Thesis, Ph.D., 1964, Cornell University. 352 p. Division of Agricultural Education, Cornell University, Ithaca.

Purpose. -- The purpose of this investigation was to determine those situational and individual characteristics of beginning farm operators which influence their comprehension and competence in becoming established in farming.

Method. -- Key informants in each county in the state were asked to provide a list of beginning farm operators. In this way, 2,260 farmers were identified. These farmers were listed according to state agricultural regions and then stratified according to the number of cows they milked. The proportion of farmers in each stratification was computed. Using this base proportion the farmers were put into clusters and the clusters selected at random. An interview schedule was prepared based on previous research and the recommendations of departments in the College of Agriculture. The schedule was field tested and the procedure to be used in interviewing was standardized. Schedules were edited following data collection and the information coded for computer analysis. Data were analyzed using cross tabulations, correlation matrices and regression equations.

Findings. -- There is a need for programs of instruction in agriculture in order for beginning farm operators to achieve establishment in farming. These programs should vary because of the differences in educational needs among farmers. However, the educational needs of farmers can be predicted on the basis of certain characteristics, of which reading habits are the best single criterion. Moreover, direct relationships are to be expected between the educational needs in terms of approved practices or farm business characteristics and individual characteristics of the farmers.

Farmers did not follow the old "agricultural ladder" in becoming established in farming in New York. They worked for agricultural wages and then attained an ownership status; started as a partner, worked for wages and then attain a partnership; or used a combination of wages and salary from professional positions, partnerships and/or ownership.

Specific educational needs were found in dairy husbandry, such as the need for assistance in increasing milk production, improving herd health, and analyzing milk production records. Farm management was the most important single area of educational need where assistance was wanted in improving farm efficiency, cost control, analysis of the farm business, use of credit and planning for the future. The greatest needs in farm mechanics were in electricity, planning and constructing farm buildings, and selecting and repairing farm machinery. Crop production needs centered around soil management, controlling insects and weeds, selection of fertilizer and seed, and effective use of soil resources.

Insight into the attitude and philosophy of the beginning farm operator may be obtained through his goal setting activities. Goals reported among farmers indicated that in the future, farmers will bring more feed to the cows, engage in more pregnancy testing, use pipe line milking and bulk tanks, purchase rather than raise grain, and increase mechanization and chemical weed control. The behavior of the farmer can be changed by technical assistance visits, but these visits should have a purpose and should be planned in order to be effective. The farmer who is achieving well in farming is searching for additional technical assistance. However, this assistance should allow for active participation on the part of the farmer.

RICHARDSON, C. MARK. Separation of Agriculture Students into Curriculum and Academic Success Groups by Discriminant Analysis. Thesis, D.Ed., 1964, The Pennsylvania State University. 118 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To determine whether discriminant functions computed from measures of aptitude, personality traits, vocational interest tests, and high school rank will separate freshman male students into curriculum and academic success groups. The hypotheses concerned agriculture students graduated in science and general programs, graduates and drop-outs, comparison with other academic divisions, and application for the advanced Air Force ROTC program.

Method. -- Three distinct groups of male students of The Pennsylvania State University freshman class of 1957 comprised the sample for the study. There were 333 students from the College of Agriculture, 199 from the College of Education, and an all-University sample of 1215 students who elected the basic Air Force ROTC program.

The forty-five independent variables used in the study were measurements of aptitude, personality traits, vocational interests, and high school graduation rank. These data were obtained by the Division of Counseling during Freshman Orientation Week. The IBM 7074 Computer located at The Pennsylvania State University Computation Center was programmed for the discriminant analysis statistical technique and used to process the data. Discriminant functions, critical scores and individual v-scores were computed and used for classification of individuals into "curriculum" groups and "academic success" groups to which they belonged. Values of t were used to test significance of percentages of separation between student groups. Three major and nine auxiliary hypotheses were formulated to test significance of separation in nine dichotomous groups selected as dependent variables.

Findings. -- The results of testing the hypotheses formulated for the study were that all groups of students included in the statement of the problem were significantly separated. By computing discriminant functions and individual v-scores based on high school graduation rank and scores made on aptitude, personality trait and vocational interest tests, which are given to all entering freshmen, agriculture students can be significantly separated into the curriculum and academic success groups to which they belong. This capability adds a valuable guidance technique to those presently available.

ROGERS, CHARLES H. Factors Associated with Supervising Teacher Effectiveness. Thesis, Ed.D., 1964, Cornell University. 190 p. Library, Cornell University, Ithaca.

Purpose. -- The study was designed to (1) identify certain personal and professional characteristics of supervising teachers which influenced the performance of their role, and (2) to determine the influence of various kinds and amounts of professional training on the performance of the supervising teacher.

Method. -- Using a jury of outstanding leaders in agriculture teacher education and the head teacher educators of the agricultural education departments from the North Atlantic and Southern Regions, a scale was developed for the evaluation of the performance of supervising teachers. The agricultural education departments from each of the teacher education institutions furnished a list of supervising teachers who served during the 1962-63 academic year along with completed supervising teacher performance rating scales for each teacher. The supervising teachers for each institution were then placed into three groups based on their performance scores - most effective, moderately effective, and least effective. The most effective teachers from each institution were combined as were the least effective teachers from each institution to comprise the two study groups used in the investigation.

Data relative to personal and professional characteristics of supervising teachers were collected with a mailed questionnaire. Two hundred supervising teachers were included in the most effective and least effective groups. One hundred and ninety-five completed and returned questionnaires.

Comparisons were made between the most effective and the least effective groups to determine differences in characteristics for which data were collected, and to test the twenty study hypotheses. For the purpose of testing hypotheses, the data were analyzed using the t-test and chi square test.

Findings. -- The following characteristics were identified which influenced the performance of the supervising teacher: (1) the age of the teacher, (2) employment mobility, (3) experience as a supervising teacher, (4) the academic degree held, (5) professional reading, (6) participation in professional organizations, and (7) participation in local community organizations. No differences were found between the most effective and least effective groups of supervising teachers for the following characteristics: (1) previous occupational experience in education, (2) the number of years of vocational agriculture teaching experience, (3) the number of years the teacher had taught at his present location, (4) the kind and amount of undergraduate and graduate professional training, (5) participation in professional and technical workshops and conferences, (6) the amount of special college training in student teaching supervision, and (7) participation in supervising teacher workshops.

The findings of this study corroborated the conclusions of earlier research which indicated that supervising teacher performance was influenced by the following factors: (1) previous experience as a supervising teacher, (2) academic degree held, (3) reading of professional literature, (4) participation in professional organizations, and (5) participation in local community organizations. However, earlier research which concluded that previous occupational experience in education, professional training, special supervising teacher training, and job satisfaction influenced supervising teacher performance was not supported by the findings of this study.

SCHOOLCRAFT, ARTHUR GRANT. Parliamentary Procedure Contest Offerings, Evaluation and Future Developments. Problem, M.S., 1964, West Virginia University. 51 p. Department of Agricultural Education, West Virginia University, Morgantown.

Purpose. -- To examine the possible methods for improving the score card for the West Virginia Association of Future Farmers of America Parliamentary Procedure Contest.

Method. -- The data for the study were collected from thirty-three states having a parliamentary procedure contest. Four states reported that no contest of this type was being used. Thirteen states did not reply.

Findings. -- Parliamentary procedure contests actually demonstrate democracy in action. Clarity of transactions was a point judged by many states, but not considered in West Virginia.

The following points were most used in judging parliamentary procedure contests throughout the state associations, including West Virginia. These are listed in order of major importance: (1) Ability of Presiding Officer, (2) Secretary's Minutes, (3) Voice and Expression, (4) General Ability to Team, and (5) Response to Judges Questions.

Unclassified motions were listed only on the West Virginia score card. Bonus motions were listed by only two states other than West Virginia. Dress and neatness appeared on only three state association's score cards. It is evident that these items are not felt to be of major importance in but a small per cent of the contests.

Whereas clarity of transactions was considered important in eleven states. It is not listed on the West Virginia score card.

This study indicated that the following changes should be made in the official West Virginia Parliamentary Procedure Contest score card: (1) The bonus motion should be discontinued, (2) Unclassified motions should be discontinued, (3) The heading for dress and neatness should be discontinued, and (4) Clarity of transactions should be added.

SMITH, CHARLES O. Suggested Teaching Plans for Use in Teaching Selected Electrical Units in Vocational Agriculture. Essay, M.Ed., 1964, Cornell University. 72 p. Library, Cornell University, Ithaca.

Purpose. -- To provide agriculture teachers with a cohesive, logical arrangement of farm electrification units together with some suggested teaching plans for these units.

Method. -- A review was made of all literature distributed by the New York State Electric and Gas Corporation, as well as literature from other electric power companies throughout the United States. A further review of courses of study and lesson plans published by agricultural teacher training institutions throughout the country, and a survey of the studies in agricultural education was made to determine those relevant. Interviews were made with staff members of the Agricultural Education Department and the Agricultural Engineering Department at Cornell University and the study was discussed with agriculture teachers. The prepared units were then submitted to the Agricultural Engineering staff of the New York State Electric and Gas Corporation to be checked for technical accuracy.

Findings. -- This study resulted in the development of a series of lesson plans for teaching selected electrical units in agricultural education. The units stressed the managerial aspects of farm electrification. The units were made as complete as possible. They included a list of materials needed and explanations for the teachers.

No attempt was made to prepare a complete farm electrification course. Other units were to be added by teachers as they deemed it necessary to fit their changing agricultural needs.

SMITH, ROBERT A. An Evaluation of the Farm Mechanics Course of Study at State College High School by a Panel of Experts. Paper, M.Ed., 1964, The Pennsylvania State University. 60 p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose. -- To appraise the course content and class time allotted for teaching the various units in the farm mechanics program in the State College High School Department of Vocational Agriculture.

Method. -- A questionnaire was developed, based on the farm mechanics course of study now offered at the State College High School, and mailed to 18 teachers and teacher educators for their reaction. Identical questionnaires were mailed to 15 successful farmers in the patronage area of the high school, 15 Keystone Farmers (State Farmer Degree in the FFA) who were graduated from the State College High School and who were engaged in farming. Eleven responses were received from the teacher group, 10 from the farmer group, and 13 from the Keystone Farmers. Ten questionnaires from each of the three groups were randomly selected and reported in this study.

In the questionnaire, recipients were requested to indicate if in their opinion the allotment of time to the various units was sufficient, too much, or too little.

Findings. -- All three groups were in general agreement on the number of class periods that should be allotted to each unit of farm mechanics instruction. All three groups generally felt the farm power and machinery area was the most important unit in the farm mechanics course of study, automation mechanics and rural electrification was next in importance, followed by farm buildings and conveniences, soil and water conservation, and general skills.

It was found that teachers and farmers closely agreed as to the relative importance of the various units in the farm mechanics course of study. On the basis of the information revealed in the study the farm mechanics phase of the agricultural program in the State College High School was revised.

SWECKER, PAUL E. Comparison of Fall, Early Spring and Late Spring Planting Dates of Strawberries. Problem, M.S., 1963, West Virginia University. 52 p. Department of Agricultural Education, West Virginia University, Morgantown.

Purpose. -- To examine the possible planting dates for commercial strawberry production in West Virginia and use the results for improving and increasing strawberry production in the State.

Method. -- Data concerning strawberries were collected by labor and cost cards and field observations from three plots of one thousand Surecrop strawberry plants each. The field work and observations were done by the author and a cooperating grower. Both had the cooperation of the personnel in the Horticulture Department of West Virginia University.

Findings. -- The summarized data showed that during the dry growing season of 1963, runner and runner plants produced from the May 28, 1963, planting were not sufficient in number or satisfactorily developed by the August or October field observations. The planting of April 10, 1963, appeared to be comparable to the November 6, 1962, planting in number of runners and number of runner plants at the time of the October field observation. Little difference existed in October between the three different plots as to the number of mother plants having double crowns.

The total cost of production of each of the three plots varied only slightly. The cost of the plants was not included because the grower used his own plants so that all plants would be of equal quality and stored under similar conditions; therefore, the plant cost for each plot would be the same except for longer storage for the plants of the later two plantings. Less holeing was required for the May 28, 1963, planting; otherwise, the total labor for each plot was approximately the same.

It appears from the findings that some of the work in the strawberry enterprise can be spread out over more than the usually thought of season.

THOMPSON, JOHN F. State Farm Organization Leaders' Perceptions of Vocational Agriculture. Thesis, M.S., 1964, University of Maryland. 122 p. Library, University of Maryland, College Park.

Purpose. -- To determine perceptions of vocational agriculture held by state leaders of farm organizations, differences between perceptions of leaders of the three farm organizations, and differences among leaders in terms of age, sex, position and degree of contact with vocational agriculture.

Method. -- A mail questionnaire was sent to the total population of 435 state officers of the Farm Bureau, Farmers Union, and Grange; 85 percent responded.

Findings. -- Perceptions concerning vocational agriculture held by leaders of state farm organizations were measured in thirteen areas. The leaders' major perceptions were: (1) the most important purpose of vocational agriculture is to train boys for an occupation in agriculture, (2) agricultural adult education is an addition to the vocational agriculture teacher's job, (3) the development of rural leadership is the most significant contribution of vocational agriculture to the rural community, (4) non-farm boys should be on a planned program of placement for farm experience, (5) all citizens should receive some instruction in agriculture and there should be a one-year course in general agriculture in all high schools, and (6) vocational agriculture should not necessarily be confined to rural areas nor to a vocational course only if taught in suburban schools.

In general, vocational agriculture was perceived to be vocationally oriented by Farmer's Union leaders, generally oriented by Grange leaders, and vocationally oriented, but limited to rural and farm activities, by leaders of the Farm Bureau.

Perceptions of leaders under 36 years of age differed from the older age groups. A slight difference in perceptions existed between the presidents-masters, vice-presidents-overseers, and secretaries. Larger differences existed among the other officers.

TUGEND, DAVID MARTIN. Comparative Study of Selected Farm Mechanical Skills Performed by Successful Maryland Farm Operators and Farm Mechanical Skills Taught in Vocational Agriculture in Certain Maryland High Schools. Thesis, M.S., 1964, University of Maryland. 124 p. Library, University of Maryland, College Park.

Purpose. -- To determine if farm mechanical skills performed by successful farm operators were being taught in vocational agriculture in high schools.

Method. -- The transposed variation of the standard error formula was utilized for determining the successful farm operator sample size. A jury was selected to validate 100 farm mechanical skills in five areas of agricultural engineering.

Eighty successful farm operators, randomly selected from eight Maryland counties were interviewed. Farm operators were asked to: (1) indicate which of the 100 farm mechanical skills were used in their farm operations between April 1, 1959, and April 1, 1963; (2) identify persons performing the skills used; and (3) indicate the level of knowledge they possessed for skills applicable on their farms.

Forty Maryland vocational agriculture teachers were sent questionnaires asking each to: (1) indicate which of the 100 farm mechanical skills were taught to in-school students between June 1, 1961, and June 1, 1963, and (2) explain why certain skills were not taught during this instruction period.

Findings. -- This study found that due to a greater proportion of teachers teaching in-school students to perform the skills than the proportion of successful farm operators performing the skills, there was a significant difference between the number of skills performed by the farm operators and the number of farm mechanical skills taught by the teachers. Over two-thirds of the successful Maryland farm operators not performing farm mechanical skills used on their farms indicated they were not trained to perform the skills.

The most frequent reason why certain farm mechanical skills were not taught by Maryland vocational agriculture teachers was a lack of equipment. However, a 0.48 positive correlation existed between the farm mechanical skills performed by successful Maryland farm operators and farm mechanical skills taught by Maryland vocational agriculture teachers.